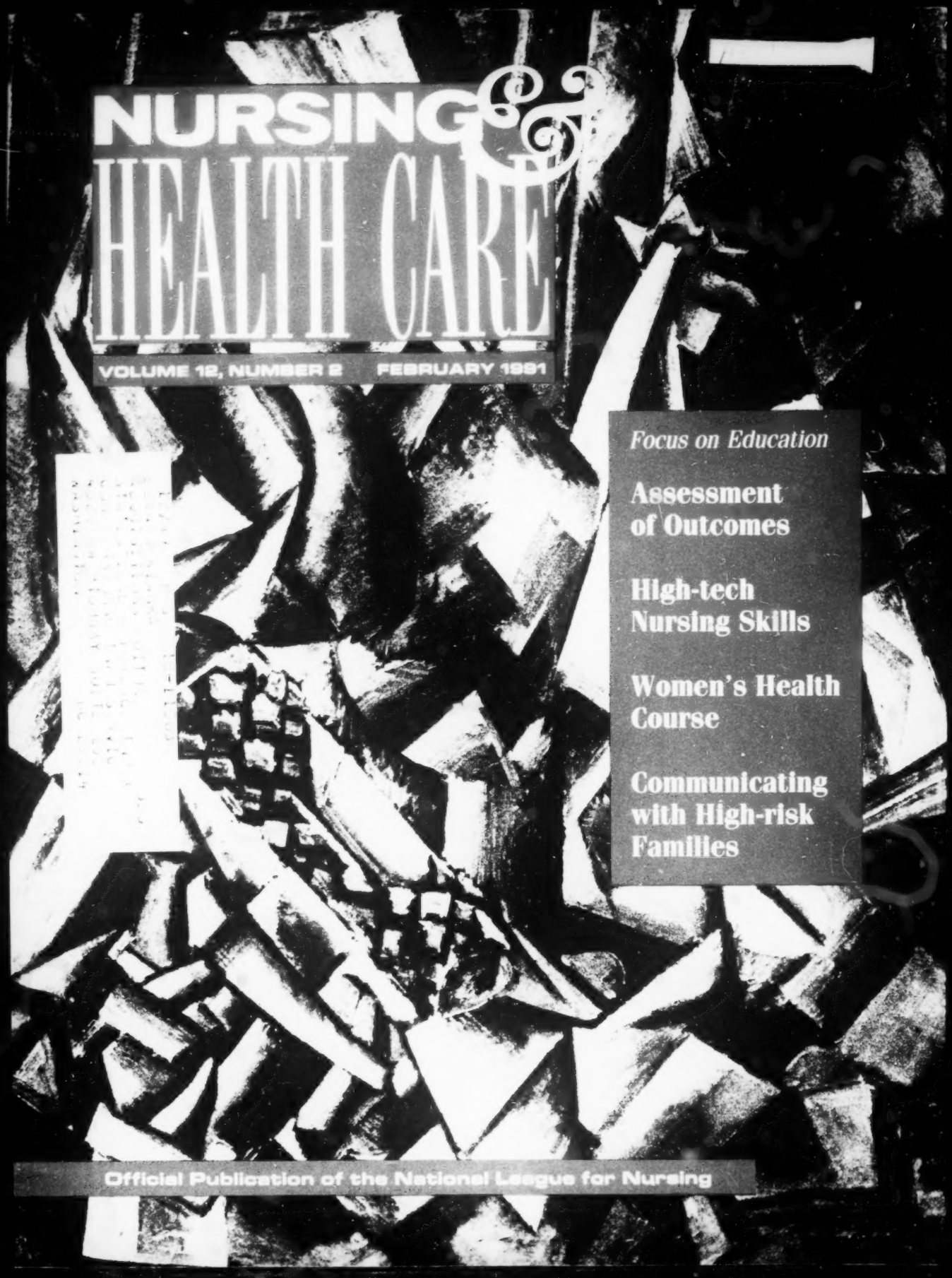

NURSING & HEALTH CARE

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Focus on Education

Assessment of Outcomes

High-tech Nursing Skills

Women's Health Course

Communicating with High-risk Families

Official Publication of the National League for Nursing

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FEATURES

Assessment of Outcomes: The Design and Use of Real Simulation Nursing Performance Examinations 68
Carrie B. Lenburg and Carol Ann Mitchell

The authors feel that assessment of student outcome is necessary, and use their experience with the New York Regents External degree programs to back up their philosophy.

A Women's Health Course with a Feminist Perspective: Learning to Care for and Empower Ourselves 76
Susan Boughn

The author describes such a course as a "strategy in dealing with what has been referred to as the central dilemma of U.S. nursing, 'the order to care in a society that refuses to value caring.' "

Nursing Skills Necessary for Competency in the High-tech Health Care System 92
Marianne Neighbors, Evelyn K. Eldred, and Margaret Sullivan

Nurses will have to keep pace with advances in health care technology, say the authors. "Technical devices and complicated procedures will not dissipate," they write. "They will only increase as scientific advances continue."

Helping Nursing Students Communicate with High-risk Families: An Educator's Challenge 98
Helen Lerner and Mary Woods Byrne

It's the authors' contention that problems in communication and resistance by clients, as well as unfamiliarity with maternal care skills, offer a challenge to students who care for high-risk families during their maternity experience.

DEPARTMENTS

Editorial 59

Calendar 63

Washington Focus 64

AIDS: Advocacy and Activism 67

NLN Perspective . . . 102

Marketplace 105

Final Word 106

Classifieds 108

NURSING & HEALTH CARE offers diverse views on subjects of interest to readers. Articles represent the opinions of individual contributing authors and are not necessarily those of the National League for Nursing.

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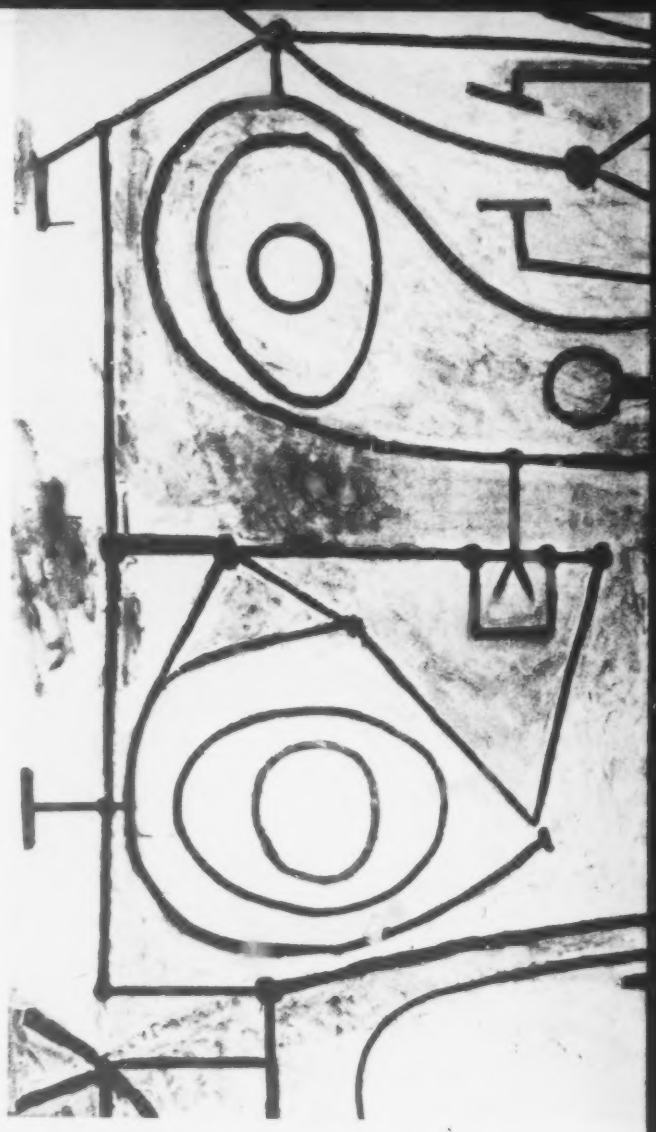
Nursing Skills Necessary for Competency in the High-tech Health Care System



Neighbors, Sullivan, and Eldred tell us how schools of nursing and institutions of nursing practice conform—or fail to conform—in regard to what constitutes basic nursing procedures. Are schools leaving the new graduate unprepared for everyday practice? A survey of association degree schools is revealing.

Key Words: procedures, technology, competency, nursing practices

Marianne Neighbors, Evelyn Eldred, and Margaret Sullivan

Technology around the world, especially in the health care field, has increased significantly in the past decade. With the intensification of technology, the skills performed by nurses have been influenced correspondingly. Traditionally, high-tech skills were introduced and performed only by nurses who worked in intensive care units or other specialized departments within the hospital. Now it is commonplace for complicated procedures and equipment to be an integral part of the ongoing care of patients in general care units of hospitals, clinics, and in the home (Bowyer, 1986; Mallison, 1988). The expectation for nurses to execute complex skills will become more intrinsic to practice if current economic, social, and technological forces persist (Malila, 1987).

Nierenberg (1987) has suggested that the nurse educator's role has changed because of technology and that educators should become more responsive to the educational needs of those in the care-giving role. While Malila was promoting continuing education as a means to acquire new skills and knowledge for practice, and Nierenberg was emphasizing creative approaches in educational methodology, both are urging that change is needed in nursing education.

Marianne Neighbors, MEd, MS, EdD, is an assistant professor. Evelyn K. Eldred, EdD, MSN, BSPHN, and Margaret Sullivan, MEd, MN, EdD, are associate professors. All are members of the Department of Nursing, University of Arkansas, Fayetteville.

What skills are needed?

There has been an ongoing discourse between nursing service and nursing education about what skills are needed by new graduates and the acceptable level of technical proficiency necessary (Kieffer, 1984). It is probably safe to say that whatever the list might be, there will never be total agreement. Special circumstances

from one setting to the next, new knowledge, continuous discoveries, and variations in technical equipment place the list in flux. Regardless of these constraints, there is still a burden upon the profession to ferret out what is currently needed by the neophyte for competent practice. In this, the first of a two-part study, associate degree programs were queried about the teaching of complex skills in basic preparation programs for nurses. As a second phase in the study, programs preparing nurses with a baccalaureate degree are being asked to report data about these same skills.

To identify the nucleus of complex skills, practicing nurses participated in developing a list of skills needed for current practice. Criteria for inclusion were those techniques commonly performed by nurses in the clinical setting having one or more of the following characteristics: complicated in nature, needing sufficient knowledge to execute safely, and/or requiring the ability to manipulate technical/electronic devices. Nursing skills such as personal hygiene, bed making, enemas, etc. were intentionally omitted. The exclusion of these skills was purposeful, not because they are unimportant but because they are considered traditional to basic curricula, and are often performed by nonprofessional care givers. Fifty-four items were specified by nurses in the practice setting as requiring complex knowledge and skill to perform adequately (Table 1). This list served as the basis for the questionnaires structured to ascertain whether associate degree nursing programs were providing the opportunity to learn these skills and to gather opinions from nursing service about the level of proficiency expected of new graduates for these skills. No limitation was placed on service respondents with respect to a differentiation in the level of proficiency expected and the type of basic preparation new graduates had completed.

What degree of proficiency is needed?

A questionnaire was then developed to survey the opinion of practicing staff nurses and nurse executives. Ten percent of the full-service hospitals located in Arkansas, Kansas, Louisiana, Missouri, Oklahoma, and Texas were randomly selected to provide the pool of respondents from nursing service. Of those hospitals represented in the study, 57% were located in settings of less than 25,000 population; 81% had less than 250 beds; and 95% provided general services. Survey packets were mailed to executive nurses of the selected institutions with a cover letter asking them to complete a questionnaire packet and to distribute separate packets to general staff nurses directly involved in delivery of care to clients in nonspecialized units of these hospitals. The number of questionnaires directed to staff nurses in the study was based on client bed capacity of the hospital: three questionnaires for bed capacity less than 100, five for 100–249, seven for 259–499,

Table 1 *List of Techniques on the Survey*

- Assessment—total (head to toe)
  - Heart sounds
  - Lung sounds
  - Abdomen
  - Neuro
- Venipuncture, adult and pediatric
- Administering IV medication
  - Piggyback
  - Direct
  - Heparin lock
- Interpretation of lab data
  - Blood gases
  - Chemistry
  - Serology
  - Urinalysis
- Nasogastric intubation
- Cardiac monitoring
  - Application of leads
  - Interpretation of rhythms
  - Administration of drugs to correct arrhythmias
- Subclavian dressing change
- Body substance precautions/isolation procedures
- IV controllers
- IV site care/changing tubing
- Accuchecks (blood glucose levels)
- Sterile suctioning/endotracheal/tracheal
- Care of chest tubes/equipment
- Use of "special care" beds
- Advanced life support measures
  - Defibrillation
  - Medication administration
- Use of doppler
- Arterial lines, Monitoring and care of Perform arterial puncturing
- TPN
- Hemovac/drains
- Multiple IV lines
- Specimen collections (sputum, stool, smear)
- Blood and blood products administration
- Chemotherapy administration
- Lavage/gavage
- Use of computers
- Wound irrigation
- Sterile dressings, packs, etc.
- Set up central venous pressure Monitor central venous pressure
- Set up ventilators Monitor ventilators CPAP/CPEEP
- Set up hemodialysis Monitor hemodialysis
- Administer peritoneal dialysate
- Monitor intrauterine contraction pressure
- Attach internal fetal electrodes Monitor FHR internally
- Monitor FHR externally
- Administer hyperalimentation
- Administer IV meds
- PCA pumps
- Discharge planning

and nine for those greater than 500 beds. Each participant in this sector of the study returned questionnaires under separate cover.

One hundred sixty-seven staff nurses and 53 nurse executives (41% and 32% response rates, respectively) responded to the questionnaire by classifying the expected level of proficiency for the new graduate according to one of the following categories: Can Perform Without Supervision, Can Perform With Supervision, Should Have Knowledge of But Does Not Need to Perform, or Does Not Need Knowledge or Need to Perform. Nurses in the practice setting, whether staff or executive, tended to agree that all procedures were important to current practice for the beginning nurse at least having knowledge of the entity.

It is interesting to note that there were 31 techniques wherein nurse executives reported 100% agreement that the beginning nurse should have, as a minimum, introductory knowledge about these skills (Table 2). In like manner, staff nurses reported agreement on 24 items (Table 3). The remaining items that fell below the 100% value were also unusually high. Beliefs were reported at ranges between 73%–90% for nurse executives, and 80%–99% for staff nurses with respect to the need for having at least a knowledge base about the entity when starting the practice of nursing.

Are educators providing learning opportunities?

All associate degree nursing programs in the six states included in the study were asked whether they provided any learning experience for these techniques. Eighty-one out of 112 programs responded to the questionnaire, giving a 72% response rate. These programs did not fare so well when it came to verifying that these skills were taught. Looking at the responses from another perspective, there were only five items where all three categories of respondents had total agreement. Skills in this group included: intravenous piggyback medication, intravenous site care, body substance precaution/isolation procedures, hemovac/drains, and sterile dressings. These might be recognized as being common to nursing practice for a number of years. It is also possible that they have been around long enough to be accepted as integral to nursing curriculum. There were only 11 skills where there was unanimous report that the student had learning involvement either by way of classroom introduction or clinical exposure (Table 4). What is more striking is that 18 of the skills are not being included by at least 27% of the schools in the study, with 9 of them being excluded from the formal curricula of half or more of the programs (Table 5). In contrast, nursing service cohorts revealed by 73% or greater that these same skills were important to the new graduate to some degree in the practice setting, as can be seen in Tables 2 and 3. Techniques that fell into this category were the following: life support/defibrillation, performance of arterial puncture, set-up of central venous pressure, set-up and monitoring of ventilators, set-up and monitoring of hemodialysis, administration of peritoneal dialysate, and the attachment of internal fetal scalp electrodes.

Nursing educators have typically taken the position that they are unable to teach everything the nurse needs for the caregiving role. It might be said that many educators believe that if the students learn the "basics"

and have developed an analytical approach to new situations, they will be able to cope in the work-world. While there may be merit in certain aspects of the educators' stance, nursing service has found it necessary to help new graduates become acclimated to the barrage of technology and complicated procedures they will face. This has been done through orientation periods of variable length, assignment to preceptors, and placement in less intense settings prior to assuming full responsibilities. The data found in this study support the notion that educators should take a renewed interest in curriculum with reference to the type of skills to which students are exposed, and will subsequently need when they graduate.

Table 2 *Skills with 100% of respondents stating the minimum needed is introductory knowledge*

Skill	Nurse Executives (%)		
	Can perform without supervision	Can perform with supervision	Should have knowledge of but does not need to perform
Assessment—total (head to toe)			
Heart sounds	73	21	6
Lung sounds	78	20	2
Abdomen	80	18	2
Neuro	80	18	2
Venipuncture, adult, and pediatric	58	39	4
Administering IV medications			
Piggyback	81	17	2
Direct	77	21	2
Heparin lock	75	23	1
Interpretation of lab data			
Blood gases	48	40	12
Chemistry	60	31	10
Serology	64	27	10
Urinalysis	64	27	10
Subclavian dressing change	53	40	8
Body substance Precautions/isolation	96	2	2
IV site care/changing tubing	93	6	2
Accuchecks (blood glucose levels)	70	26	4
Sterile suctioning/ Endotracheal/tracheal	66	30	4
Care of chest Tubes/equipment	42	53	6
Use of "special care" beds	26	57	18
Use of doppler	44	37	19
Hemovac/drains	64	31	6
Multiple IV lines	55	36	9
Specimen collections (Sputum, stool, smear)	89	10	2
Blood and blood products administration	64	30	6
Lavage/gavage	64	26	9
Wound irrigation	57	38	6
Sterile dressings, packs, etc.	85	14	2
Monitor FHR externally	44	33	23
Administer IV meds	72	26	2
Discharge planning	72	26	2
Nasogastric intubation	68	25	8

*All figures were rounded to the nearest whole number.

What can educators do about it?

As curriculum is examined, there are several adjustments that can be made, some of which do not require major curriculum revision. Educators in their planning should determine how best to incorporate the skills into the learning experiences, whether to approach the teaching from the practice laboratory, the clinical setting, or both. Effort should be made to designate a particular course as having responsibility for introducing the skill. If further proficiency is expected, then subsequent courses in the program of study should make appropriate plans. In this way, tracking proficiency is ensured. One school reported that they note such information on formal evaluation progress reports of students and expect these experiences as part of the successful achievement for the course. Practice with selected advanced procedures should not be left to chance any more than those in the more basic categories are left to chance.

Attention must be paid to the practice laboratory. There are a number of procedures that might be cited as examples when one is considering changes that are necessary. To dismantle the mystique and avoidance associated with revitalizing the practice laboratory, it is possible that educators themselves may need to become more familiar with equipment and the performance of certain procedures. They may also need to discard outdated equipment and teach with current technical devices.

Temperatures are no longer taken with mercury thermometers. We should be teaching temperature taking with digital thermometers. While

Table 3 *Skills with 100% of respondents stating the minimum needed is introductory knowledge*

Skill	RNs (%)		
	Can perform without supervision	Can perform with supervision	Should have knowledge of but does not need to perform
Assessment—total (head to toe)			
Heart sounds	81	14	6
Lung sounds	85	13	2
Abdomen	87	11	2
Neuro	80	18	2
Venipuncture, adult, and pediatric	62	36	2
Administering IV medications			
Piggyback	75	23	2
Direct	73	26	1
Heparin lock	73	26	1
Subclavian dressing change	61	25	4
Body substance Precautions/isolation	90	9	1
IV site care/changing tubing	86	14	1
Accuchecks (blood glucose levels)	74	21	5
Sterile suctioning/ Endotracheal/tracheal	65	34	1
Care of chest tubes/equipment	45	50	5
Hemovac/drains	71	27	2
Specimen collections (sputum, stool, smear)	89	11	—
Blood and blood products administration	55	43	2
Lavage/gavage	59	38	3
Wound irrigation	63	33	4
Sterile dressings, packs, etc.	78	20	2
Monitor FHR externally	44	33	23
Administer IV meds	70	28	2
Discharge planning	76	21	3
IV controllers	66	30	4
TPN	44	42	14

*All figures were rounded to the nearest whole number.

manual assessment of blood pressure is still common, it is nearly as common for students to encounter digital equipment for this technique in the clinical setting, and they need access to it in practice. If time is spent checking glucosuria with various tapes and sticks, this should be drastically minimized, as students can read instructions on the container. It is far better for them to be comfortable with the electronic equipment used for measuring blood glucose, since it is more complicated and used almost exclusively in hospitals for determining insulin dose.

Academic programs have notoriously suffered for lack of funds to keep laboratory settings properly equipped and maintained. If this poses a problem, arrangements with clinical agencies could be made to borrow equipment on a short-term basis or solicit use of their educational facilities for this purpose. It may be time for academe to ask manufacturers to supply models (perhaps modified for those that are expensive) that can be used for education and practice once they have sold a product to an agency that functions as a clinical teaching institution for nursing education.

Proficiency with the previously mentioned procedures should be expected early in the study of nursing. Introducing electronic equipment whenever possible in the practice laboratory helps students develop a more realistic sense of what is to come in the clinical setting. Not only does it facilitate adjustment from one environment to the next, it should also enhance ability to adapt to more advanced equipment and procedures when encountered. As students are learning in the clinical setting, assigning them to work one on one with a staff nurse helps them to gain skill and confidence with complex procedures.

Technical devices and complicated procedures will not dissipate; they will

Table 4 *Skills Taught by All of the Schools Surveyed*

Administration of IV piggyback medications
Interpretation of lab data: Blood gases
Interpretation of lab data: Blood chemistry
Interpretation of lab data: Urinalysis
Interpretation of lab data: Serology
Nasogastric intubation
Body substance precautions/ isolation procedures
IV site care/changing tubing
Specimen collections (sputum, stool, smear)
Sterile dressings, packs
Hemovacs/drains

Table 5 *Skills Not Taught by the Schools Surveyed*

Skill	Percent	Skill	Percent
PCA pumps	27	Monitoring ventilators	50
Monitoring CVP	30	Set up CVP monitoring	63
Use of special care beds	38	Monitoring hemodialysis	63
Monitoring intrauterine contaction pressure	40	Administering peritoneal dyalysate	64
Monitoring FHR internally	41	Life support/ defibrillation	65
Arterial lines-monitoring	42	Set up ventilators	87
Use of computers	43	Attaching internal fetal electrodes	87
Life support/medication administration	49	Set up hemodialysis	92
Chemotherapy/administration	49	Perform arterial puncture	93

only increase as scientific advances continue. Since there are fewer units within hospitals where new graduates can be assigned without encountering a number of advanced techniques, educators must focus their attention more acutely on reality. The reality is especially astounding when one contemplates the figures in Table 5 and realizes that a large number (ranging from 27% to 93%) of associate degree programs in this study do not in any way teach the techniques identified on this list. Yet, these very procedures compromise 18 out of the 54 items listed in Tables 2 and 3 and specified as important to nurses providing care in the full-service hospital.

Nursing service has made a tremendous contribution in providing preceptorships and orientation for neophytes. It seems that it is now time for educators to listen to the voice of our counterparts in nursing service and hear what they have to say concerning what new graduates need in order to function adequately as they enter the profession.

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NLN CONVENTION 1991: POSTER SESSIONS

Abstracts are now being accepted for the poster session to be held at NLN's 1991 Biennial Convention in Nashville. Poster presentations are scheduled for Wednesday, June 12 in the convention exhibit hall. Abstracts may describe current research, demonstration projects or specific applications. They may be completed projects or works in progress.

There will be no posting fee, but participants with accepted posters must register and pay convention registration fees. Poster boards (4′ × 8′) will be provided, plus skirted tables for display. Individuals who desire to present their work using computers may do so only if they pay the costs associated with such a display.

If you wish to present a poster at the convention, please submit a 300-word abstract to be reviewed according to the following criteria:

1. Purpose of study or project
2. Relevance to program theme, "Toward a Healthier Nation: Educating for Reality"
3. Clarity/writing
4. Graphic content

Abstracts will be accepted through March 15, 1991 and should be sent to:

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